



PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of

Docket No. : Q78389

Yuki HONGO, et al.

Appln. No. : 10/713,209

Group Art Unit : 1773

Confirmation No. : 2460

Examiner : Dhirajlal S. Nekarani

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For LIGHT TRANSMITTING HARD COAT FILM FOR USE IN TOUCH PANELS

DECLARATION UNDER 37 C.F.R. § 1.132

Mail Stop Amendment

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

Sir :

I, Yuki Hongo, hereby declare and state :

THAT I am a citizen of Japan ;

THAT I have received the degree of Master of Engineering in 1998 from Chuo-University ;

THAT I have been employed by Lintec Corporation since 1998, where I hold a position as a researcher for the development of functional films ;

I have prepared new comparative examples, Comparative Examples 6 to 12.

Preparation of curable composition 9 for forming high refractive index layer

A solution was prepared by using the same method as the preparation of curable composition 4 in the specification, except that 45 parts by mass of ITO dispersion in methyl iso-butyl ketone (Sumitomo Metal Mining Co., Ltd., brand name : X-510CN40, concentration : 40 % by mass) were used as instead of 180 parts by mass of 10 % by mass antimony-doped tin oxide dispersion in isobutanol (Dai Nippon Ink and Chemicals, Inc., brand name : TA-01D). The obtained solution is curable

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composition 9 for forming a high refractive index layer.

Preparation of curable composition 10 for forming high refractive index layer

A solution was prepared by using the same method as the preparation of curable composition 5 in the specification, except that 112.5 parts by mass of ITO dispersion in methyl iso-butyl ketone (Sumitomo Metal Mining Co., Ltd., brand name : X-510CN40, concentration : 40 % by mass) were used as instead of 450 parts by mass of 10 % by mass antimony-doped tin oxide dispersion in isobutanol (Dai Nippon Ink and Chemicals, Inc., brand name : TA-01D). The obtained solution is curable composition 10 for forming a high refractive index layer.

Preparation of curable composition 11 for forming high refractive index layer

A solution was prepared by using the same method as the preparation of curable composition 7 in the specification, except that 25 parts by mass of ITO dispersion in methyl iso-butyl ketone (Sumitomo Metal Mining Co., Ltd., brand name : X-510CN40, concentration : 40 % by mass) were used as instead of 100 parts by mass of 10 % by mass antimony-doped tin oxide dispersion in isobutanol (Dai Nippon Ink and Chemicals, Inc., brand name : TA-01D). The obtained solution is curable composition 11 for forming a high refractive index layer.

Comparative Examples 6

The hard coat film was obtained using the same method as Example 1 in the specification, except that the curable composition 9 was used as high refractive index layer.

Comparative Examples 7

The hard coat film was obtained using the same method as Example 2 in the specification, except that the curable composition 10 was used as high refractive index layer.

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Comparative Examples 8

The hard coat film was obtained using the same method as Example 3 in the specification, except that the curable composition 11 was used as high refractive index layer.

Comparative Examples 9

The hard coat film was obtained using the same method as Example 4 in the specification, except that the curable composition 9 was used as high refractive index layer.

Comparative Examples 10

The hard coat film was obtained using the same method as Example 5 in the specification, except that the curable composition 9 was used as high refractive index layer.

Comparative Examples 11

The hard coat film was obtained using the same method as Example 6 in the specification, except that the curable composition 9 was used as high refractive index layer.

Comparative Examples 12

The hard coat film was obtained using the same method as Example 7 in the specification, except that the curable composition 9 was used as high refractive index layer.

The evaluations of steel wool hardness of the hard coat films prepared above were "A", that is, scratches were observed on the surface of the hard coat films. The steel wool hardness is described in page 29 of the present specification. And, at the result of the steel wool hardness test, peelings were observed between the high refractive index layer and the low refractive index layer.

On the contrary, in Examples 1 to 7 in Applicants' specification, the

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evaluations of steel wool hardness of the hard coat film were "N", meaning that scratches were not observed. Further, the claimed content of antimony-doped tin oxide (ATO) unexpectedly improves the adhesion between the high refractive index layer and the low refractive layer.

Also, an adhesion property test was conducted by the cross cutting method according to JIS K5600-5-6. The adhesion property test comprises cross cutting the surface of the hard coat film, laminating a pressure-sensitive adhesive tape on the cross cut surface of the hard coat film, and peeling the pressure-sensitive adhesive tape. The adhesion property test is not described in the present specification. In the adhesion property test, the number of the cross cut pieces of the hard coat film was 100. The number of the cross cut pieces which were not peeled, was counted. The larger the number of cross cut pieces, the more unexpected superiority of the adhesion.

In Comparative Examples 6 to 12, the number was 0. That is, all cross cut pieces of the hard coat film were peeled. On the other hand, in Examples 1 to 7 described in the present specification, the number of the cross cut pieces which were not peeled was 100. In all Examples, the peeling of the cross cut pieces was not caused.

As described above, the adhesion is unexpectedly superior when ATO is used instead of ITO.

From a review of the comparative data, I conclude that the light transmitting hard coat film for use in touch panels provides unexpectedly superior adhesion between the high refractive index layer and low refractive index layer as compared with Nishida and Kumazawa.

I declare further that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both,

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under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Date : November 27, 2006

Yuki Hongo

Yuki Hongo